

## REMARKS

Independent claim 26 was amended as follows:

Replaced the term "fruit flesh" in steps d) and e) with "fruit pulp", in line with the recitation of step c). This amendment addresses the rejection under 35 U.S.C. 112, second paragraph.

Replaced "mixtures" in step e) with "mixture".

Added "from about 30°C to a temperature" after the word "temperature in step e)" and "from about 10 seconds to" after the word "for".

Basis for these amendments is found on page 8, lines 9-11 and in claim 31. Claim 31 has been canceled, without prejudice.

Claim 26 has been further amended to incorporate the preferred subject matter of claim 27, which has been canceled, without prejudice.

Care has been taken not to introduce any new matter.

### **The Present Invention**

The present invention is directed to a stabilized avocado fruit pulp composition comprising chunks of said fruit, wherein said pulp composition has not been subjected to chemical treatment, high vacuum processing and temperatures over about 90°C. The stabilized fruit pulp composition of the present invention unexpectedly has an extended shelf life at about ambient temperature, may be added to a thickening base to produce a stable puree composition having a viscosity of at least about 5,000 centipoise, and is suitable for human consumption.

## The Rejections

### 35 USC § 103

Claims 26, 30 and 32 were rejected under 35 U.S.C. 103(a) as being unpatentable over Gordon, page 107, in view of Rumberger (3,630,759) and Guadagni (2,780,551).

Claims 27, 28, 29, 33, 34, 36 and 37 were rejected under 35 U.S.C. 103(a) as being unpatentable over the above references as applied to the above claims, and further in view of Huchette, et al., (4,160,849) and further in view of Guadagni (2,780,551).

Claim 35 was rejected under 35 U.S.C. 103(a) as being unpatentable over the above combined references as applied to the above claims, and further in view of Jen (Quality Factors of Fruits and vegetables), page 211 and 218.

Claim 31 was rejected under 35 U.S.C. 103(a) as being unpatentable over the above combined references as applied to claims 26-30, 32-37 above, and further in view of Sims, et al., (XP008025210 – applicant's reference).

According to the Office Action:

Claim 26 requires that the fruit was ripened under particular conditions. Gordon discloses a method of ripening avocados by buying hard avocados and storing them until ripe and then refrigerating them for up to 4 days. Certainly the time between picking the fruit and getting it to the stores is not more than 4 weeks, as fruit only has a particular length of time it needs for ripening, which is seen to have been within the skill of the ordinary worker to determine. Ripening of avocados from personal experience takes up to 3 days after they are bought. The claimed temperature can be room temperature. The reference discloses various pulps such as apple and apricot (col. 7 and col. 12). Most rooms with the lights are dark part of the day. Therefore, it would have been obvious to ripen as claimed.

Claim 26 further requires heating the pulp for less than 4 minutes. Guadagni discloses a process of heating fruit from 10 seconds to 10 minutes just enough to deactivate surface enzymes (col. 3, lines 40-46). Certainly, particular times could be achieved depending on the temperature used. The specification discloses that the pulp is heated until there are no active enzymes (page 7, 2nd paragraph). Therefore, it would have been obvious to treat for the length of time required to deactivate enzymes because it is known to treat to deactivate surface enzymes, and further heating would certainly deactivate the enzymes found in the inner fruit.

It is not seen at this time that the avocado does not have the proper hardness factor since it has not been cooked. It is well known to harvest fruit before it is ripe and to let it ripen to a particular hardness factor. Therefore, it would have been obvious to ripen fruit to a particular hardness factor.

Claim 30 further requires a particular relative humidity (RH) for storage. Rumberger discloses that it is known to store avocados in a RH of 50% in packages (abstract and col. 5, lines 73-75, col. 6, lines 1-9). Therefore, it would have been obvious to store at the claimed humidity in the process of the combined references as shown by Rumberger.

Claims 26 and 32 further require that the chunks have particular dimensions. However, it is within the skill of the ordinary worker to make a product containing particular sizes of ingredients such as fruits depending on what the product is used for; etc.

The reference to Hutchette, et al., disclose various pulps such as apple and apricot as in claim 27 (col. 27 and col. 12). However, the above combined references show other fruit, and nothing is seen at this time that the fruits have different processing problems. For instance, avocado is a climacteric fruit just as are the apples of the

references (page 176, Jen, 2nd paragraph). Therefore, it would have been obvious to treat like fruit the same because they present the same problems.

Claims 28, 29 and 33 further require that the pulp composition contains water, fruit pulp and oil in particular amounts, and no detrimental enzyme activity after heating. Huchette, et al., disclose a composition containing a potato pulp base, as in claim 28, which is mixed with tomato as in a sauce or with fruit such as apples (abstract and col. 7, lines 40-70). Water is used at within the claimed amounts. Huchette, et al., disclose a composition containing 6 g. of oil (col. 7, lines 15-25). The enzymes have been killed by heating as above. The stabilized fruit pulp has been shown above. Therefore, it would have been obvious to add a stabilized pulp composition containing fruit pulp, water and oil, with no enzyme activity to a thickening base since Huchette, et al., disclose that it is known to add thickening base such as potato pulp to tomato to make a sauce, and nothing is seen that a potato pulp could not have been added to other pulps for the same function of thickening the pulp.

The viscosity of the mixture can be from 12,000-17,000 cps as in claim 34 as disclosed by Hutchette (col. 7, lines 55-60). Claim 34 differs from the reference in the use of stabilized avocado pulp. It would have been within the skill of the ordinary worker to produce a particular viscosity particular since the claimed ingredients have been disclosed above, etc.

Guadagni discloses as above that it is known to stabilize fruits. Certainly, heating fruit will stabilize it or destroy the enzymes, whatever the form it is in. Therefore, it would have been obvious to use the stabilized fruit of Guadagni in the composition of Huchette; etc.

Claim 36 requires that the stable puree can be used in various ways. Huchette, et al., disclose that the composition can be used in sauces, which are similar to dips and spreads, which mainly differ in the particular ingredients of the composition. Therefore, it would have been obvious to use the puree in various products.

Claim 37 requires that various additives are present. Hutchette, et al., disclose flavorings such as powdered onion, salt, pepper and garlic (col. 7, lines 15-25). Therefore, it would have been obvious to use known flavorings in the claimed composition.; Claim 35 requires a particular pH. Huchette, et al., disclose the use of tomato paste, which is acidic in itself (abstract). The use of acids is disclosed in other formulations such as with apricot pulp (col. 12, lines 45-53). Even though avocado is not mentioned, it is considered to be a fruit, and nothing is seen that it could not be treated in the same manner as other fruits. The exact pH is not stated in the reference to Huchette, et al., but it is noted that acids are used which lower the pH of the composition, thereby providing further stabilization. Also, Jen discloses that it is known to use acids in food preservation (page 211, last paragraph, page 218, 2nd and 3rd paragraph). Therefore, it would have been obvious to modify the pH of fruit products for the known function of preventing spoilage as shown by Jen in the process of the combined references.

The limitations as in steps a and b have been discussed above. Guadagni discloses that it is known to wash, peel and pit fruit (col. 4, lines 51-58). Huchette discloses mashing as in making a compote (col. 7, lines 50-65). Guadagni also discloses that it is known to add ascorbic acid to fruit and then to heat process it (col. 4, lines 55-63). Also, Jen discloses various preservation methods, which are used to preserve fruit (page 209, first paragraph). The particular length of time of heating is seen to have been within the skill of the ordinary worker since heating is one of the processes used in preserving foods. Sims, et al., disclose that it is known that heating a puree to 90 C inactivates polyphenoloxidase (an enzyme), and reduces browning in juices. Bananas could also be heated to 80 for 1 to 2 minutes (abstract). Therefore, it would have been obvious to treat as shown by the combined references.

### The Argument

The subject matter of claims 27 and 31 has been incorporated in claim 26 as amended. It would appear that the rejection of independent claim 26 and dependent 27-34 and 36-37 is based on a combination of Gordon in view of Guadagni, Rumberger, Huchette, and Sims. The rejection of claim 35 is treated as rejected over the combination of the 4 references and additionally Jen.

The present invention aims at providing a stabilized avocado fruit pulp composition and puree composition that does not brown, darken or change flavor and that has extended shelf life at ambient temperature, and has good mouthfeel and texture (cf. page 2, line 30 to page 3, line 11). This goal is attained by the method for preparing a stabilized fruit pulp composition as defined in the claims, comprising a series of well-defined steps characterized by specific temperatures, time periods, dimensions and quantities. As demonstrated in Example 1, this results in a stable fruit composition with substantially no active polyphenol oxidase.

Gordon ("The Avocado", p. 107) provides a one-paragraph instruction of the standard practice of storing and ripening avocados. Gordon explains that avocados are "usually offered hard"; Gordon recommends to keep avocados at room temperature until ripe and refrigerate when ripe. Gordon fails to describe a method of making a stabilized fruit pulp, let alone a fruit pulp comprising chunks having dimensions of from 1x1x1mm to 15x15x15mm. Furthermore, Gordon does not disclose the steps of mixing fruit pulp with acidulant and subsequently heating the mixture so obtained to a temperature of about 30-90°C for about 10 seconds to 3.5 minutes.

Guadagni (US 2,780,551) is related to a method of preventing unwanted browning in frozen fruits and vegetables, comprising heating (65-100 °C) the fruit or vegetables for 10 seconds to 10 minutes followed by freezing. In contrast, the present invention is concerned with ambient-stable compositions.

Furthermore, neither Gordon nor Guadagni teaches a method that involves (i) cutting or mashing fruit to produce a fruit pulp comprising chunks of 1x1x1mm to 15x15x15mm and (ii) mixing of the fruit pulp with acidulant.

In the Office Action (Page 4) the examiner observes: *"it is within the skill of the ordinary worker to make a product containing particular sizes of ingredients such as fruits depending on what the product is used for. Certainly, in dips and spreads one might want a larger chunk than in a bakery item. It is not seen how a particular particle size can be obtained by mashing a product, if it was mashed into a mush. Therefore, it would have been obvious to cut or mash the fruit to make a particular chunk size"*.

Applicants respectfully traverse. While Applicants accept that it is within the skill of the ordinary worker to prepare fruit chunks of a particular size, "depending on what the product is used for," the present invention is directed to a method of preparing a stabilized avocado fruit composition – one that is an ambient stable, acidified fruit pulp composition. Applicants respectfully submit that it would not have been obvious to a person of ordinary skill in the art to produce such a fruit pulp product by providing a fruit pulp comprising chunks of 1x1x1mm to 15x15x15mm and by mixing the fruit pulp with acidulant, followed by heating.

Hutchette fails to remedy the deficiencies of the other references as it is concerned with potato pulp, which is generally in the form of powder and basically acts as a starch composition for thickening, whereas the present invention, as set forth in the amended claim 26, is directed to a method of producing ambient stable avocado pulp composition.

Sims (XP008025210) article, entitled "Challenges to Processing Tropical Fruit Juices: Banana as an Example," is directed to reducing viscosity of banana for juicing. Chemical treatment, which the present invention seeks to avoid, is used to avoid browning. Little relevance to the present avocado pulp composition is seen.



The Office Action rejects individual limitations of independent claim 26 over individual references, but does not view the invention as a whole. The Office Action uses so many references to formulate a rejection because only one element appears in each, and even so not in the entirety. Viewed as a whole, the invention is not obvious.

Consequently, the subject matter of independent claim 26 and all dependent onto claim 26 are not obvious.

### CONCLUSION

Reconsideration of the rejections is respectfully requested in view of the above claim amendments and remarks.

It is respectfully requested that the application be allowed to issue.

If a telephone conversation would be of assistance, Applicant's undersigned attorney invites the Examiner to telephone at the number provided.

Respectfully submitted,

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